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09/479,708 01/07/00 MILLS

A MILLS-11

EXAMINER

MM41/0606

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WARREN, M

ART UNIT

PAPER NUMBER

2815

DATE MAILED:

06/06/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/479,708

Applicant(s)

MILLS, ALLEN P

Examiner

Matthew E. Warren

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 6 and 11 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The limitation of the data resistor comprising metal oxide is not supported by the specification.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-6, and 19-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation of the "reference resistor having similar properties of conductivity as the data resistor" is vague. The term "similar" in itself is vague because it does not completely define how close the properties are to each other. Furthermore, the term "properties of conductivity", without being defined as to which properties, is also vague. Such a term could be interpreted in any manner, including thermally conductive

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properties as well as electrically conductive properties. Because the claimed limitations are so vague, the examiner has concluded that the "reference resistor having similar properties of conductivity as the data resistor" means that both resistors conduct electricity (as opposed to a resistor that conducts electricity and one that does not conduct electricity [insulator]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 6-8, 11-19, and 22-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luich (US 4,727,269) in view of Watanabe et al. (US 5,548,252).

Luich discloses (fig. 1) a ROM device having a plurality of data resistors (13, 14), word and bit lines, and a temperature compensation circuit to maintain current through the circuit (col. 2, lines 26-45). The device comprises a reference resistor (24) wherein the conductivity is responsive to changes in temperature (col. 3, lines 3-14 and col. 3, lines 45-61). A current source is coupled to a reference resistor to provide a constant current that develops a voltage across the reference resistor (col. 3, lines 15-29). The data resistors and reference resistors have the same conductive properties. A sense amplifier is included in the circuit and provides a constant output voltage (col. 3, lines 30-44). The sense amplifier also includes an operational amplifier having a fixed

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feedback resistor (46). The sense amp operates in the linear or non-linear region (col. 4, lines 16-54). Luich also discloses (col. 2, lines 26-64) a method of maintaining current through the ROM by supplying a reference voltage to input lines, wherein the reference voltage is responsive to changes in temperature. Luich shows all of the elements of the claims except the switch connected to the reference resistor and the resistor material. Watanabe discloses (col. 15, lines 1-56) a temperature compensation circuit in which a switch (SW) is connected to a reference resistor to selectively couple a voltage to wordlines. The switch couples the voltage when the input is high or the coupling occurs when the input is low for a second switch (col. 15, lines 1-8). Watanabe also discloses that the resistors are made of polysilicon to prevent the sensitivity of the circuit from being lowered by parasitic capacitance. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the temperature compensation device of Luich by adding a switch as taught by Watanabe to selectively couple the circuit to signal lines. It would have also been obvious to use polysilicon for the resistor because Watanabe teaches that it is a suitable material and it maintains the sensitivity of the compensation circuit.

Claims 4, 5, 9, 10, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luich (US 4,727,269) in view of Watanabe et al. (US 5,548,252) as applied to claims 1, 2, 3, and 7 above, and further in view of Hsueh et al. (US 5,859,458).

Luich and Watanabe show all of the elements of the claims except the polysilicon resistors being doped or undoped. Hsueh et al. discloses (col. 3, lines 25-37) a resistor of polysilicon being doped or undoped to achieve a desired resistance. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the polysilicon resistor of Luich and Watanabe by providing a specific doping as taught by Hsueh to form an integrated circuit having different resistance values.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Taguchi et al. (US 5,729,154), Nagumo (US 6,028,472), Jordan (US 5,585,741) also show temperature compensation devices that use various types of resistors.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E. Warren whose telephone number is (703) 305-0760. The examiner can normally be reached on Mon-Thurs, and alternating Fri, 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 308-7722 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

MEW

June 2, 2001

A handwritten signature in black ink, appearing to read 'Eddie Lee', is positioned above the printed name.

EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800